

DRAFT

Solid Waste Facilities Master Plan

City of Seattle

Seattle
Public
Utilities

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Executive Summary

Seattle's solid waste management system has changed substantially over the last 40 years. Yet during that time only minor modifications have been made to the City's two solid waste handling facilities, which were built in the 1960s. These facilities are outdated and lack the capacity and flexibility needed to meet Seattle's current or future solid waste material handling needs.

The 1998 Solid Waste Comprehensive Plan for the City of Seattle identified a need to improve existing solid waste facilities, but did not include a detailed plan for facility upgrades. Rather than take a piecemeal approach to fixing individual problems, Seattle Public Utilities (SPU) decided to take a broad, long-term view of the facility needs in the entire solid waste system. In December 2001, the City Council passed Resolution 30431 directing SPU to develop a Solid Waste Facilities Master Plan that would address the long-term facility needs for managing Seattle's waste.

Limitations of the Existing System

The two existing solid waste transfer stations, which were built in the South Park and Wallingford neighborhoods, now present numerous obstacles to efficient and cost-effective solid waste management in Seattle. The transfer stations were originally designed for the single purpose of consolidating refuse for transfer to a local landfill for disposal. Renamed "Recycling and Disposal Stations" in the early 1990s to reflect their increasing role in recycling materials, the stations now devote over one third of their space to waste diversion and recycling. Space limitations currently hinder the City of Seattle's efforts to reach its 60-percent recycling goal.

The facilities also lack adequate capacity, and during peak periods lines extend onto public roadways almost daily. Estimates indicate that wait times could exceed 2 hours during peak periods unless changes are made soon. As service levels decline, increased sanitation problems in the city can be expected. The existing system also lacks the flexibility to adapt to a changing waste stream and has almost no excess capacity to deal with emergencies or disaster events that could suddenly generate large quantities of solid waste.

The existing stations also affect the adjacent neighborhoods with odor, dust, noise, traffic, and other problems. The buildings require relatively high maintenance and present several operational inefficiencies. The stations also contain many safety hazards that must be managed to prevent injuries to staff and customers. Costly upgrades, such as seismic retrofits and rewiring, would be required if the buildings are to remain in service. The temporary trailers used for the station offices and employee facilities also need to be replaced. These and other problems warrant immediate attention.

In addition, the way that waste is transferred for disposal has some inherent inefficiencies. Waste is currently compacted into containers at the transfer stations and trucked to a railhead, where it is loaded onto a train for long-haul shipment to a distant landfill. The

stations were not designed for this function, and the modifications have generated several inefficiencies and maintenance problems.

Values and Goals

Values and goals for the Solid Waste Facilities Master Plan were expressed in City Resolution 30431. The main objectives of the plan as outlined in the Resolution are as follows:

- Minimize long-term financial and environmental costs.
- Minimize negative impacts (noise, traffic, dust, odor, visual, air, water pollution) on affected communities, and consider opportunities for neighborhood economic development when selecting candidate sites.
- Provide a safe and healthy operational environment for customers and workers.
- Provide enhanced self-haul material recovery opportunities, collection of additional materials, and efficient transfer of all solid waste as outlined in the City's Solid Waste Comprehensive Plan.
- Ensure consistency with City Comprehensive and Neighborhood plans and other City priorities and objectives (including conservation, sustainable building, environmental justice, preservation of habitat, and natural drainage systems).
- Align with SPU's strategic objectives and optimize current contract opportunities.
- Incorporate opportunities for partnerships with regional governments, the private sector, and others through which cost savings, improvements to environmental quality, and other benefits can be achieved.
- Take strategic advantage of the City's options to terminate and rebid, or extend, its refuse, recycling, and disposal contracts beginning in 2007.

Public Input

Beginning in May of 2002, SPU conducted an extensive outreach program to help develop the Solid Waste Facilities Master Plan. SPU invited solid waste experts from areas outside of Seattle to a colloquium to share information on a variety of solid waste topics, such as legal and contracting issues, regulations, state-of-the-art transfer station design, resource recovery, and economics. The utility also held meetings with key stakeholders, and surveyed Recycling and Disposal Station customers to learn more about how they use the current facilities and what improvements they felt were needed. SPU hosted meetings with community groups in early 2003, and held four public workshops in the neighborhoods near the Recycling and Disposal Stations. Input from these meetings helped establish priorities and was used to help shape the recommended system option and features at individual facilities.

Approach Used to Evaluate Options

SPU used a structured decision process to evaluate options. The process was driven by a series of internal workshops that developed, screened, and analyzed options for solid waste facility improvements. The steps involved in developing options included the following:

1. Define what constitutes an option.
2. Develop initial system options.
3. Define waste flows between facilities for each option.
4. Prepare conceptual layout plans for facilities.
5. Prepare capital cost estimates.
6. Evaluate each option's quality of service (i.e., how well it meets Resolution 30431 goals).
7. Model life-cycle system costs over about a 30-year period to capture potential savings of capital expenditures.
8. Evaluate cost uncertainties.
9. Summarize and compare the life-cycle costs and quality of service of each option.

Recommended System Option

After analyzing the options relative to the status quo, SPU's Planning Team selected an option for further consideration by the Mayor and City Council. The recommended option has the highest quality of service score relative to its life-cycle costs. It involves adding an intermodal solid waste transfer facility at Harbor Island (or another suitable location) and rebuilding both of the City-owned Recycling and Disposal Stations with just enough additional property added to the sites to accommodate needed services.

Implementation of this option would divert the majority of collection trucks directly to the intermodal facility. Existing buildings at the Recycling and Disposal Stations would be demolished and rebuilt to provide enough space to accommodate customers and provide reuse and recycling opportunities. A brief description of the main facility improvements in the recommended option is provided in Table ES-1.

TABLE ES-1
Facility Improvements in Recommended Option

	New Intermodal Facility	Improvements at North Recycling and Disposal Station	Improvements at South Recycling and Disposal Station
Add property	10 to 15 acres	1 ½ acres	4 acres
Key features of recommended improvements	Build new tip building to accommodate collection vehicles, transfer trailers from the Recycling and Disposal Stations (RDSs), and other large vehicles. Onsite rail loading facility at which loaded containers are placed on railcars for transport to a distant landfill.	Rebuild larger tip building. Rezone and add additional property for offices and reuse/recycling. Separate recycling entrance with drop-off containers and drop boxes. Separate area for reuse drop off.	Build new tip building for all self-haul materials. Separate area for dropping off traditional recyclables and new building for all wastes, including mixed construction and demolition material for recycling. New retail reuse building.

Table ES-2 compares the features of the recommended option to the status quo. As shown, 37 percent of the incoming self-haul tonnage would be diverted, which is close to the 39 percent rate required to meet the system-wide 60-percent recycling goal. Reconstructing buildings would minimize odor, dust, noise, and other impacts to adjacent neighborhoods. The recommended option meets the goals outlined in Resolution 30431, which authorized this plan.

Implementing the recommended option would increase solid waste system costs by about \$1.4 million per year. This represents a 1.15-percent increase in system costs over the current adopted budget of \$121.3 million to operate the solid waste system in 2003. This increase is relatively small compared to the substantial improvements in solid waste services.

TABLE ES-2
Comparison of Recommended Option to Status Quo

	Status Quo	Recommended Option
Additional cost over status quo	\$0	About a 1.15-percent increase in annual costs of the solid waste system.
Reuse facilities	None, no diversion.	Reuse drop-off at North RDS (NRDS). Reuse drop-off and reuse store at South RDS (SRDS).
Self-haul recycling	No significant change. Currently at 18 percent diversion of self-haul tonnage. May decline in future due to lack of space.	Recycling drop-off areas separate from disposal areas. Separate material recovery facility at SRDS. Estimated diversion rate expected to increase to 37 percent of tons received.
Queue time on a busy day	> 2 hours	< 30 minutes
Customer use areas	No significant change.	Over twice as many unload stalls and multiple entry lanes to reduce wait time.
Health and safety	Meets basic health and safety standards, but many physical hazards remain that must be managed.	Improved safety with a reduction in physical and environmental hazards.
Education opportunities	None.	Viewing areas, classroom, and information displays.
Employee facilities	Rebuild office and employee facilities within space available.	Build new office and employee facilities on adjacent property at NRDS and on existing property at SRDS.
Local environment at stations	Occasional dust, odor, noise.	Reduction in dust, odor, noise, and truck traffic.
Facility appearance	No significant change.	Improved building aesthetics and landscaping, plus 1 percent for art.

Implementation Schedule

After the Mayor and City Council review this plan and provide input, SPU will complete the final report by the end of 2003 or early 2004.

A plan of this extent requires environmental review under the Washington State Environmental Policy Act (SEPA) before an option can be approved and implemented. The environmental review, along with property assessments, negotiations, and permitting, is scheduled for 2004. Permitting and design will proceed in the following years, pending program approval and funding.

Implementation of the plan is tentatively scheduled to occur in phases as shown in Table ES-3.

TABLE ES-3
Implementation Schedule

Facility	2004	2005	2006	2007	2008	2009	2010
Intermodal	Permitting	Design	Design	Construction	Operation		
SRDS		Permitting	Design	Design	Construction	Operation	
NRDS			Permitting	Design	Design	Construction	Operation

Conclusions

The key conclusions of the Solid Waste Facilities Master Plan are as follows:

- The City's solid waste facilities need significant upgrades in order to meet the goals expressed in City Resolution 30431. Continued operation of the existing Recycling and Disposal Stations without improvements will result in unsatisfactory service and continued adverse impacts to adjacent neighborhoods.
- Developing an intermodal facility would be beneficial and cost-effective. An intermodal facility would improve the efficiency of waste transfer, reduce transfer and disposal costs, free the Recycling and Disposal Stations for self-haul customers, reduce adverse impacts to neighborhoods, improve safety, and increase system flexibility and stability.
- Meeting the goals expressed in Resolution 30431 can best be achieved by rebuilding the two Recycling and Disposal Stations. Although remodeling the existing buildings was considered, the remodel option was found to be relatively expensive and failed to meet many of the objectives of Resolution 30431.
- Some additional property adjacent to each Recycling and Disposal Station is needed in order to provide needed services. The existing sites are constrained, and additional space is needed at the North Recycling and Disposal Station for the facility office, employee facilities, reuse facility, and recycling facility. Additional space is needed at the South Recycling and Disposal Station for a vehicle maintenance facility and additional waste diversion facilities of sufficient size to meet waste diversion goals.

- The recommended option meets the facility plan goals as stated in City Resolution 30431. Implementing the recommended option would improve the reliability and flexibility of the solid waste system and would keep the city clean and at the forefront of waste reduction and diversion for years to come.